



Correction Notice #1: ENERGY, MECHANICAL

January 04, 2021

To Marsha Poon
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Project Address 423 2nd Ave Ext S
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Project No. 6508387
Sender Matt Aalfs, BuildingWork
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Marsha:

Please see below responses to Energy and Mechanical Correction Notice #2 dated October 01, 2020.

Per correction #1, This project has been reviewed for conformance with one or more of the following codes: 2012 Seattle Building Code (SBC); 2012 Seattle Existing Building Code (SEBC); 2015 Seattle Energy Code (SEC).

Corrections:

1a. -1d1.

Response: See response letter from Madison Engineering, P.S.

1d2. Please include roof R2, thermal floor over trash area (this floor ID is missing on drawing), and thermal walls between trash area and heated/conditioned spaces such as B2 & A1

Response: See response letter from Madison Engineering, P.S. For thermal envelope boundary details see sht G231.

1d3. Provide thermal envelope diagram to identify conditioned/heated spaces.

Response: For thermal envelope boundary details see sht G231.

1d3. – 1i.

Response: See response letter from Madison Engineering, P.S.

2. Provide air barrier/ thermal envelope diagram for the building on drawing.

Response: See air barrier/thermal envelope diagram on sht G230.

3. A100 & A101: Provide code required insulation or include these walls in calculations for the walls between the trash/recycling area and heated spaces. Provide section/detail showing insulation R value for the ceiling above trash area (floor below heated/conditioned space).

Response: The trash/recycling area is included in the conditioned space. See barrier/thermal envelope diagram on sht G230 and note on sht 910, Door Schedule (Door 112).

4. Provide energy code compliance notes on A sheet stating the followings:

a, The two options selected for Additional Efficiency Package Options per 2015 SEC section C406.

b, DOAS with energy recovery per section C403.6 for offices and retails.

c, Energy modeling C407 compliance path per C503.8.3 # 3.3 substantial alteration.

d, Energy metering and energy consumption management per section C409.

Response: Energy code compliance notes added to sht G230.

5. A400: Provide R value for 2.5" insulation in detail X2.

Response: See updated note for Assembly X2 on sht A400.

6. M007: Transformer vault exhaust shall be minimum of 10 ft. from unprotected opening and outside air intake per 2015 Seattle Mechanical Code section 501.3.1 #7, Provide a note on roof plan.

Response: See added note on sht M207 in addition to a 10' radius from all edges of the vault exhaust vent.

7. M202: Where is EF-comm located?

Response: The EF-COMM is located in the comm room (012) on the basement level and is shown on drawing M201, and scheduled on drawing M002 FANS schedule.

8. A106:

a, Provide a note stating the code required onsite renewable energy production per section C411 on roof plan.

b, Provide compliance note for solar readiness per section C412 on roof plan.

Response: See added notes on sht A106 – roof plan.

9. M004: Provide heating and cooling load calculations and equipment sizing per section C403.2

Response: Zone load calcs and system sizing calcs have been exported from the load calculation software and are shown on the added sheets M005-M009

End of Correction Response

Madison Engineering, P.S.

October 15, 2020

TO:

Marsha Poon
Seattle Department of Construction and Inspections
Engineering Services
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FROM:

Kevin Madison, President
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SUBJECT:

Project #6508387-CN
423 2nd Ave E Seattle, WA 98104
Correction Notice #2
Review Type ENERGY, MECHANICAL

Codes Reviewed

This project has been reviewed for conformance with the following codes: 2015 Seattle Mechanical Code (SMC); 2015 Seattle Energy Code (SEC); 2015 Seattle Fuel Gas Code (SFGC); and 2015 Seattle Building Code (SBC).

Corrections

1. C407 report compliance with 2015 Seattle Energy Code:

a. Page 4: This project is a substantial alteration, and in compliance with SEC section 505.8. Provide a statement in report. Also, to include the two options selected for Additional Efficiency Package options per section C406.

Madison Engineering specific response: Please see underlined revisions in the Executive Summary on Page 4 of the cycle 2 report.

b. Page 23: infiltration has an error message.

Madison Engineering specific response: Table reference on page 23 has been updated.

c. Page 14, "Energy consumption by end-use": The proposed for service water heating and pumps are not matching BEPS report page 519. Please explain.

Madison Engineering specific response: Results have been updated and values between Table 10 and the BEPS/BEPU reports are identical in the cycle 2 report.

d. Page 20:

d.1) Please include product information such as U factor & SHGC, NFRC CPD numbers or simulation report for the proposed fenestrations. Provide calculations for the area weighted average U factor. Are the existing windows included in energy modeling?

Madison Engineering specific response: Manufacturer information on all fenestration products has been included in Appendix C.1. All fenestration products are new/replacements and are modeled explicitly so area weighted averaging is not needed. Additionally, first floor glazing complies with the Exception to C303.1.3 and U-factors are determined accordingly with Table C303.1(5).

d.2) Please include roof R2, thermal floor over trash area (this floor ID is missing on drawing), and thermal walls between trash area and heated/conditioned spaces such as B2 & A1.

Madison Engineering specific response: The entire building has been modeled as conditioned space including the trash area. In the SRD model, the exterior surfaces, including the roll-up door, are modeled according to requirements of C402.1.5. Please see thermal envelope boundary details added by others to the architectural drawings.

d.3) Provide thermal envelope diagram to identify conditioned/heated spaces.

Madison Engineering specific response: Please see thermal envelope boundary details added by others to the architectural drawings.

e. Page 9: SRD HVAC system states DOAS meeting section C503.6 is incorrect. Please revise.

Madison Engineering specific response: Reference has been updated to C403.6.

f. page 32: This page states there are six air to water heat pumps, and M004 equipment schedule shows 12 inverter driven air source heat pumps. Are these the same equipment?

Madison Engineering specific response: Appendix F.2. has been revised to 12 heat pumps to reflect the HVAC drawings. Furthermore, we have revised the model to reflect a limitation in DOE-2 of no more than 10 primary equipment components attached to a circulation loop. According to the mechanical engineer, the preliminary control strategy will be to stage heat pumps in groups of 3 (either in heating or cooling mode, but not both) with the load spread equally across those heat pumps. Then other groups of 3 will be staged on as the load increases. We have revised the model to include 4 heat pumps attached to the loop, each representing the equivalent of 3 heat pumps used in the actual design.

g. Page 12: The control to reduce flowrate and fan power for ERV is missing on M004 ERV schedule. Please explain.

Madison Engineering specific response: Please see revisions by others describing the ERV control sequence (see ERV schedule notes added on drawing M002). Motorized zonal branch dampers controlled by CO2 sensors shall be provided for each zone branch duct; duct-mounted pressure sensor shall reset fan speed at ECM motors accordingly.

h. Page 7: DOAS with energy recovery is required for offices per section C403.6, provide discussion on DOAS regarding the efficiencies in baseline and proposed design. Provide reference M sheet number.

Madison Engineering specific response: Please see added detail in Table 3 covering the design and heat recovery efficiencies of the DOAS systems included in the proposed design. Also we have added additional discussion to Section III.B. SRD HVAC System Determination to include design description and efficiency of the baseline DOAS system.

i. Page 7: Provide discussion regarding the interlock for the openable windows and cooling equipments with reference drawing number for the control.

Madison Engineering specific response: We have added a discussion of the control sequence for windows and ventilation systems. Please see revisions by others describing the control sequences (see ERV schedule notes added on drawing M002 and chilled beam and radiant baseboard control notes added on drawing M003).